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ABSTRACT

This collection of abstracts is part of a continuing series providing information on recent doctoral dissertations. The 17 titles deal with the following topics: the effects of preinstructional activities on the learning and retention of prose; the interaction of picture and print in reading instruction; the perception of structure in scrambled texts; models for the encoding of meaning in memory; the cue systems involved in prose processing; the effect of linguistic connectives on reading comprehension; a comparison of the effects of word frequency and graphic feature characteristics upon the word recognition performance of first grade children; the predictability of four types of sentences as measured by the eye-voice span of graduate student readers; an investigation of cloze procedure as a memory-search process; a study of the organization of concepts in semantic memory and semantic processing; the effects of maturation and achievement upon passage independent text performance; a psycholinguistic description of comprehension as demonstrated by gifted readers in grades four and five; covert speech in the beginning reading process; reorganization and the recall of prose; and the relationship of imagery and propositions to the understanding of sentences. (MAI)

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Reading, Comprehension, and Memory Processes:

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DEVELOPMENT OF FLEXIBILITY OF SCHEMA SHIFTING IN PROSE COMPREHENSION

THE EFFECTS OF PREINSTRUCTIONAL ACTIVITIES ON THE ACQUISITION AND RETENTION OF PROSE MATERIAL

Order No. 7808940

AKINYEMI, Adekunle, Ph.D. The Florida State University, 1977. 150pp. Major Professor: Walter Dick

The majority of instructional resources in schools and training settings are printed materials. To investigate preinstructional strategies that will facilitate effective learning from prose materials was the goal of this study.

Several preinstructional activities have been shown to apparently enhance the acquisition and retention of printed text. The relative effectiveness of these activities has not been adequately investigated. Three such activities considered in this study were advance organizers, behavioral objectives, and overviews/introductions.

Sixty students (36 females and 24 males) enrolled in a media class in the College of Education at Florida State University participated in this study. These participants were randomly assigned to one of three treatment groups and a control group. An adapted excerpt from Carroll's (1963) article on a model of school learning was used as the instructional text.

Treatments administered included: (a) instructional text only (control group), (b) instructional text and overview, (c) instructional text, overview, and advance organizer, and (d) instructional text, overview, advance organizer, and behavioral objectives. A 2 X 4 factorial design was used in the study and the analysis of variance (ANOVA) results showed no statistically significant differences between the group means on post and retention tests, time taken to study the text, and time taken on the posttest.

Separate analyses of the posttest and the retention test were done for constructed response, multiple choice, incidental, and objective-based items. Results showed no statistically significant difference among the treatment groups on constructed response and multiple choice items; also on incidental and objective-based items. However, there was a 30 percent better performance on multiple choice items than constructed response items and 20 percent better performance on incidental items (because they were designed to be easy in order to motivate the participants) than objective-based items. Significant interaction effects were found between groups and test sessions on constructed response items; and also on objective-based items.

Recommendations for future research include: 1. The use of the developmental approach in which preinstructional activities are systematically investigated at the elementary school, high school, and college levels. Results of such studies may reveal that preinstructional activities may not be necessary for the more sophisticated learners (college level), but very beneficial to the less sophisticated learners (high school and elementary school levels). 2. Ability grouping of participants used in studies of the effects of preinstructional activities may indicate differential effects for students of differing ability levels. 3. The use of longer experimental sessions, more participants, and longer tests in studies may result in significant findings for the effects of preinstructional activities.

THE INTERACTION OF PICTURE AND PRINT IN READING INSTRUCTION

DENBURG, Susan Myra, Ph.D. University of Toronto (Canada), 1975.

The role of pictures in reading instruction has stimulated much controversy yielding few conclusive results. Pictures have been criticized for attracting attention away from the text and for presenting ambiguous and/or misleading information; they are also said to arouse the child's attention and motivate him to read. Rarely, however, has the role of the picture within the reading task been delineated or the picture designed to optimize that role.

Reading is here seen to involve a partial trade-off and integration of contextual and graphemic information. This model of reading provides the framework for the proposed mechanism of pictorial facilitation: that pictures provide one additional source of information which the beginner, who has limited familiarity with graphemic information, can exploit in the process of trade-off and integration.

In testing this conception of picture use, the present study examines the effect of increasing amounts of pictorial information on the word identification of first-graders in context and in isolation, as well as the nature of the interaction between this pictorial information and the graphemic, syntactic and semantic information that is more commonly associated with the reading task.

The reading material consisted of 24 simple active declarative sentences presented in one of four picture conditions: no picture; full picture (which depicted both actor and object nouns and their interaction); and two partial pictures (which depicted either actor or object noun and the interaction, with the explicit deletion of the other noun).

The 48 Grade One children from two neighbouring schools in Hamilton, Ontario were randomly assigned to four groups, which were balanced for sex and graphemic skill (i.e., familiarity with the visual array of the word). The sentences were randomly assigned to four groups; together with the subject groups and the picture conditions, they comprised a four-by-four Latin Square design. Thus, each subject was exposed to each sentence and each picture condition, but never saw the same sentence with more than one type of picture.

The first task consisted in reading each sentence aloud, while the second task consisted in identifying the actor and object nouns in isolation. The dependent variable in both tasks was the number of actor and object nouns correctly identified. Incorrect responses to the nouns in sentence context were examined in terms of their contextual and graphemic acceptability. All subjects participated in two experimental sessions held at a five day interval.

Increasing the amount of available information through the medium of pictures had a strong facilitative effect on word identification in context and a smaller though significant facilitative effect on word learning. Nouns that were pictured in either a full or partial picture were identified more frequently than unpictured nouns in a partial picture condition; these in turn were identified more frequently than nouns accompanied by no picture at all. More nouns were learned in the presence of partial or complete pictorial information than in the absence of any pictorial information, and there was some evidence for an increased trade-off of graphemic information in the presence of increased pictorial information. Readers with high graphemic skill performed significantly better than readers with low graphemic skill in every condition. However, the relationship between graphemic skill and word identification in context was qualitatively different only with respect to the unpictured word in a partial picture condition. That is, graphemic information was most significantly related to performance where the amount of contextual information and graphemic skill, though separately inadequate, were together sufficient for correct word identification.

It was concluded that a complete trade-off of graphemic information (i.e., ignoring the printed text) is not a necessary concomitant of the presence of pictorial information. Instead, the presence of a picture seemed to provide the children with an opportunity to use whatever limited graphemic skill they possessed and to integrate graphemic with contextual information in a manner reminiscent of the skilled reader.

PERCEPTION OF STRUCTURE IN SCRAMBLED TEXT
Order No. 7802158

DUECK, Alvin Clarence, Ph.D. Stanford University, 1977. 65pp.

Comprehension of written text is defined in this study in terms of seriality. Information processed earlier in time is assumed to influence comprehension of information which follows. If the text is more explicit about the connections between earlier and subsequent information, the reader can more readily grasp the serial structure of the text and hence increase comprehension. A distinction is made between contributions to perception of seriality as it emerges from one's knowledge-of-the-world and from the text. A review of the literature revealed that the cognitive factor was evident when contextual information was provided for a difficult text. Other research helped to delineate the serial information structure with a model which specified given and new information and which demonstrated how serial structure in a text could be systematically varied.

The experiment examined the perception of serial structure in prose by asking subjects to reorder scrambled text. Sixty-four subjects were given four scrambled passages of 20 sentences each and were instructed to arrange the sentences in each passage into an order that was meaningful for them. The passages were systematically varied in the type of connective between sentences, the order of given and new information, the number of connectives between sentences, the presence or absence of serial cues in the subtopics, and whether or not the theme of the paragraph was repeated in the subtopics of the text. The between-subject variables included subject factors such as sex, verbal ability and willingness to take risk.

A mixed fractional design was used in this experiment. The two dependent variables were the subject's rating of how difficult the paragraph was to order and the number of two-sentence sequences or pairs in the subject's ordering that were identical to the original paragraph. Analysis of variance was used to examine the effects of the independent variables on these dependent variables.

The following results emerged. The data failed to confirm the prediction that constructing an overall context and grouping sentences would facilitate perception of serial structure. Moreover, the results indicated that informing subjects about the nature of the information structure (serial or hierarchical) did not facilitate the task of ordering the sentences. The verbal ability factor was highly significant, but no effects were obtained for cognitive style (risk taking) or sex of the subject. When connections between sentences in a paragraph varied from specific to general, subjects found the task of ordering significantly more difficult. The results bore out the prediction that if the arrangement of given and new information was reversed in a sentence, the subject's ordering would deviate more from the original order. A significant effect was obtained when subtopics contained order cues (e.g., Another, Yet another). Lastly, no effect was observed for increasing the number of connectives between sentences.

The text factors contributing to perception of serial structure were interpreted in terms of a theory which assumed that sentences of a text could be broken into what is given or new information. Given was defined as "old" information which had been mentioned earlier, and "new" as what could not be derived from the preceding sentences. If the given-new structure was more apparent, the ability to reconstruct the order should be facilitated. The given information was made more salient by varying the connectives from an abstract pronoun to a concrete repetition, by maintaining the expected order of given information before new information in a sentence, and by adding explicit order cues to the sentences. Each of these manipulations made ordering of sentences easier. Alternative experimental research paradigms were described which would delineate more clearly the stages of information processing in the ordering task.

GENERATIVE HIERARCHIES AND THE ENCODING OF MEANING IN MEMORY
Order No. 7803424

FRIEDMAN, Mark, Ph.D. Arizona State University, 1977. 99pp.

"Unit-based" and "organization-based" approaches to the study of the encoding of meaning in memory were reviewed. The "generative" model was discussed as a good explanation of the basic "units" or elements of generated and stored meaning. The "hierarchic" model was viewed as a major principle of organization in memory for connected discourse. These models were integrated and synthesized in a "generative hierarchic" model of meaningful learning. According to this model, meaning is represented in memory in the form of "distinctive" (concrete, idiosyncratic, and episodic) associations hierarchically organized.

To test the model, it was predicted that ideas high in the hierarchic structure of a learned passage would be experienced and reported by the learner as being more "concrete" (more evocative of imagery and experiential associations) than low hierarchic ideas. This is based on the "hierarchic" assumption that high level ideas cue more numerous subsumed ideas than low level ideas, and the "generative" assumption that each accessed idea cues a set of distinctive associations from the learner's prior memory.

A set of 12 high and low hierarchic level ideas was selected from each of two experimental passages. Thirty male and female university students rated the "concreteness" of these ideas before and after exposure to the ideas in a meaningful context (i.e., in a coherent text passage to be learned). As predicted, the high level ideas were rated significantly more concrete than the low level ideas after, but not before, subjects learned the passage containing those ideas.

A second prediction implied by the generative hierarchic model was also tested. Learners who actively generate their own hierarchic organization for materials should produce numerous distinctive associations and a deep level meaning structure (a hierarchy) to organize and "contain" these meaningful associations. Therefore, learning should improve.

Eighty male and female university students learned two expository passages with a group of 20 subjects learning in each of four acquisition conditions. During learning, subjects either: (a) generated a "hierarchy" (constructed an outline) for the passage; (b) generated a (nonhierarchic) set of paragraph "topic" sentences; (c) were supplied with an organizational hierarchy (an outline) for the passage; or (d) neither received an outline, nor generated any elaboration for the material to be learned. As predicted, recall was highest for subjects in the generative hierarchic acquisition condition.

The findings of the present study tend to support both the generative hierarchic model presented here and the use of a learning strategy in which learners construct outlines for expository materials. In the writer's view, the present investigation provides a reasonable theoretical and empirical basis for further testing and discussion of a generative hierarchic model of the encoding of meaning in memory.

DIRECTION OF PROSE PROCESSING VIA INSTRUCTIONAL, TYPOGRAPHICAL, LOCATIVE, AND RELATIONAL CUES

Order No. 7808364

GLYNN, Shawn M., Ph.D. The Pennsylvania State University, 1977. 166pp. Adviser: Francis J. Di Vesta

Individuals selectively use rules to attend to and organize information in their environment. In particular, when learning from text, readers use perceptual rules to classify and select information and thus overcome the limited capacities of their processing systems. These perceptual rules, or alternatively, decision criteria, constitute readers' goal orientations and reflect their purpose in reading. Readers implement decision criteria during study to guide their attentional processes to the important information contained in a text. The major issues of interest in the present investigation were: (1) how are decision criteria defined and implemented within the prose-learning situation? and (2) do these decision criteria exert control over attentional processes and, consequently, learning products?

In the present study, decision criteria were examined in light of cue systems (i.e., related clusters of stimuli which exert an influence over their construction and implementation). The position was advocated that the decision criteria which guide attentional processes during prose learning are jointly determined by cue systems operative at the time. Instructional, typographical, locative, and relational cue systems were investigated.

All subjects studied a prose passage describing a fictitious solar system and its inhabited planets. Prior to reading the text, one-half of the subjects received instructional objectives which defined a set of cues for them (i.e., the "defined" Instructional Cue condition), while the other one-half received control statements which did not define a set of cues (i.e., the "undefined" Instructional Cue condition). Four variations of Typographical Cue were applied to the text. One-fourth of the subjects received a text in which items associated with the set of cues were underlined; one-fourth received a version in which items not associated with the set of cues were underlined; one-fourth received a nonunderlined text and generated their own underlining of information; and one-fourth (control) simply read a nonunderlined text.

The dependent measure consisted of the number of correctly recalled items on a completion-type test of recall. Recalled items of information were examined in light of their (a) syntactic relationships with other items and (b) contextual locations in the text.

The findings of this study confirmed the following hypotheses: (1) The provision of a single set of cues, derived from either a solitary explicit cue system or a combination of systems, would improve the retention of information associated with that set of cues, (2) When a combination of explicit cue systems specified two distinctly different sets of cues, the retention of information associated with those sets would not be improved, (3) In the absence of a set of explicit cues, information the reader selected for himself (as indicated by his underlining) would be better recalled than information he did not select, and (4) The retention of items of information in intra-context locations would be superior to that of items in extra-context locations. The final hypothesis, that items of information contrasted with one another would be retained better than items not contrasted, was supported only in part. That is, only when items of information were positioned in intra-context locations did contrasts facilitate their recall.

THE ROLE OF MACROSTRUCTURES AND LINGUISTIC CONNECTIVES IN COMPREHENDING FAMILIAR AND UNFAMILIAR WRITTEN DISCOURSE

Order No. 7809664

HAGERUP-NEILSEN, Allan Roy, Ph.D. University of Minnesota, 1977. 242pp.

This study examined the effect of passage structure and linguistic connectives on reading comprehension of written discourse. To assess the generalizability of findings, age of subjects and familiarity of passage content were included in the experimental design. To assess the effect of task demands on performance, three different experimental tasks were employed: wh-question probes, sentence recognition, and oral recall.

Subjects were 216 students (72 each from fifth grade, ninth grade and college). Fifth and ninth grade students were reading at or above grade placement. College students were assumed to be reading at a level commensurate with their level of educational achievement.

The study was conceptualized as three separate experiments identical except for the experimental task used to assess comprehension. Each experiment employed a 3 x 2 factorial design with student age, passage structure, linguistic marking and order of passage presentation as between – subjects variables and content familiarity of passages as the single within-subjects variable.

Equal numbers of students from each age level were randomly assigned first to one of the experiments and then to one of four treatment conditions within the experiment. Treatment conditions were reflected in the nature of the experimental passages which varied systematically according to structure (hierarchical or sequential), linguistic marking (presence or absence of connectives), and content (familiar or unfamiliar).

Each student in all conditions read two passages identical except for content. Students then answered a series of wh-questions (Experiment 1), completed a sentence recognition task (Experiment 2), or gave an oral recall (Experiment 3). A five-way analysis of variance was used to analyze the dependent measures in each experiment (except for three recognition measures for which simple t tests were conducted).

In all three experiments, overall performance was significantly ($p < .01$) better for hierarchically structured passages. This was interpreted as an indication that the constraints imposed by hierarchical structure help to circumscribe the number of plausible alternatives available when a reader attempts to interpret and encode the propositional relationships expressed in text. Conversely, propositional relationships in sequential structures do not seem to be as tightly constrained and hence may provide the reader with more plausible alternatives during processing.

The fact that the presence or absence of linguistic connectives had no significant ($p > .01$) effect on performance in any of the experiments suggested that good readers already have the necessary logical relationships encoded in memory and do not need explicit cues in text to comprehend these relationships.

The significantly ($p < .01$) better overall performance for familiar passage content is consistent with the notion that schemata (i.e., mental structures) representing familiar concepts are more fully developed than for those which are less familiar and thus allow a more complete understanding of these concepts in text. Findings also suggested that concepts with concrete referents might have highly dominant values in memory thus increasing the probability of their being understood when encountered in text.

Order of passage presentation, included as a control for possible priming effects of passage structure and content, had no significant ($p > .01$) independent effect on performance across experiments.

In each experiment, performance varied significantly ($p < .01$) as a positive function of student age. Since schemata are considered to be products of experience, it seemed reasonable to suggest that the schemata of adults are generally more complete than those of younger children whose world experience is less extensive. The fact that ninth grade and college students generally performed significantly ($p < .01$) better than fifth grade students but not differently ($p > .01$) from one another indicated that for any given body of concepts there might be a optimal level of schemata development beyond which comprehension is not significantly enhanced.

THE COMPARATIVE EFFECTS OF WORD FREQUENCY AND GRAPHIC FEATURE CHARACTERISTICS UPON THE WORD RECOGNITION PERFORMANCE OF FIRST-GRADE CHILDREN Order No. 7802581

KARTEN, Solomon, Ed.D. Hofstra University, 1978. 102pp.

This study attempted to provide additional research on the effects of word frequency and distinctive graphic features on the word recognition performance of first-grade children. The major purposes of the study were (1) the analysis of the effects of frequency of occurrence of words and four graphic feature characteristics--equal and variable length, ascending and descending word components--upon the word recognition performance of first-graders, and (2) to gain insights into the interaction of word frequency and graphic feature characteristics when they appeared in the initial and final portion of a word.

To achieve these goals, a sample of seventy first-grade children were presented with a word recognition task during which they attempted to learn unfamiliar words which contained specified graphic feature characteristics and which were selected from both high and low frequency rankings on the American Heritage Word Frequency Book. The number of trials required to learn the words were recorded and the data analyzed using stepwise regression and analysis of variance techniques, including repeated measures.

The following findings were arrived at from an analysis of the data of the investigation: 1. There was an absence of covariance between word frequency and feature characteristics and there was a significant difference in the amount of variance explained by word frequency and feature characteristics. 2. While statistical analysis indicated a significant difference between the trial scores of high and low frequency words, where low frequency words were recognized with fewer trials, this finding was not considered relevant since subsequent analysis revealed that a significant interaction existed between the two main effects being studied. 3. The effects of various feature characteristics defined in this study were considered irrelevant since quantitative analysis indicated that a significant interaction existed between word frequency and feature characteristics. 4. Analysis of variance and stepwise regression analysis confirmed that there was a significant interaction between word frequency and feature characteristics.

The conclusions drawn from the findings of the investigation were: 1. The emphasis on graphic features as a determinant of recognition ease or difficulty without the consideration of additional feature characteristics is questionable. 2. The words which appear most often in our language are not necessarily learned more easily by beginning readers. 3. The combination of certain word frequency and graphic feature characteristics may result in words which are easier for beginning readers to learn. 4. The emphasis on high and low frequency rankings as a predictor of recognition ease or difficulty without the consideration of varying high and low frequency limits is questionable. 5. The observed interaction of the two main effects--word frequency and feature characteristics--may be attributable to the particular choice of frequency and feature characteristics chosen for this study.

THE DEGREE OF PREDICTABILITY OF FOUR TYPES OF SENTENCES AS MEASURED BY THE EYE-VOICE SPAN OF GRADUATE STUDENT READERS Order No. 7808716

LAGOTIC, Diana Lynn, Ph.D. The University of Florida, 1977. 116pp. Chairman: Dr. Henry T. Fillmer

Psycholinguists have offered at least three different language processing models to explain the strategies involved in the reading process. Two models, the deep structure model and the chunk model, offer diametrically opposite explanations. A third model, offered by Harry Levin and Eleanor Kaplan, suggests that readers use their knowledge of sentence predictability in attempting to decode and comprehend sentences.

This study focused on the degree of predictability of specific types of sentence transformations. Answers to the following questions were sought: 1. Is there a difference in the degree of predictability as measured by the eye-voice span between a) a basic sentence and its "THERE" transformation, b) an active sentence and its passive transformation, c) a basic sentence and its Wh-question transformation, d) a basic sentence and its IT-inversion transformation with an infinitive subject nominalization? 2. Does the number of transformations within a sentence affect the degree of predictability? 3. Does the type of sentence transformation affect the degree of predictability? 4. Does the position in the sentence where the eye-voice span is measured affect the degree of predictability?

Sentences containing the four types of transformations tested were developed by the researcher. The eye-voice span was measured at predetermined places in each of the sentences. The study sample consisted of 20 University of Florida Reading and English graduate students.

The data were analyzed using a randomized block factorial design with repeated measures. Results showed that there was a significant three-way interaction: type of transformation by basic versus transformation by critical point.

Further analysis indicated that there was a complex interrelationship among the three independent variables - type of transformation, basic versus transformation and critical point - on the eye-voice span measurement.

There was no evidence from the data to support any of the language processing models. The findings indicated that since no one variable by itself can explain the differences in the eye-voice span measurements, the explanations of language processing offered by the major models are too basic.

AN INVESTIGATION OF THE CLOZE PROCEDURE AS A MEMORY-SEARCH PROCESS Order No. 7803741

McKENNA, Michael Clayton, Ph.D. University of Missouri - Columbia, 1977. 220pp. Supervisor: Richard D. Robinson

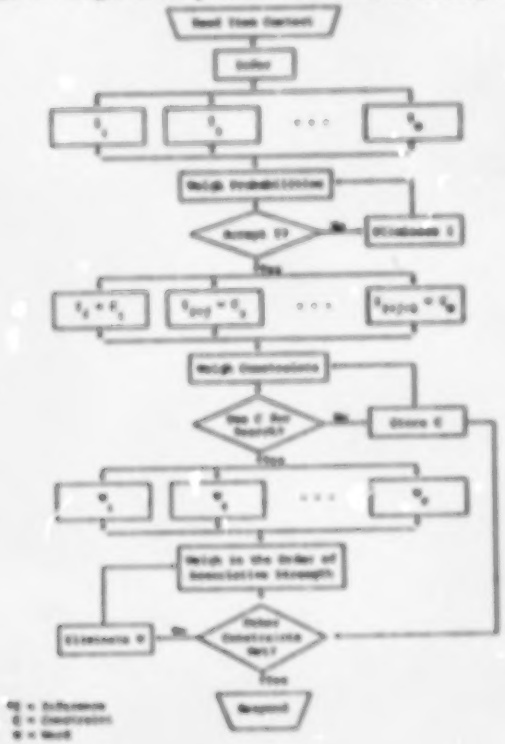
PURPOSE. The purpose of this study was to investigate the psychological events which underlie the cloze task. Since prior work had shown that filling cloze deletions is most probably a process of searching limited sets of memory elements, the specific questions explored in this study were: (1) Does the amount of time needed to answer a cloze item vary directly with the number of constraints operating in it? (2) What proportion of cloze errors consists of words meeting some proportion of the constraints present? (3) To what proportion of cloze subjects do words occur meeting some but not all of the constraints? (4) What proportion of subjects are conscious of beginning with words meeting one constraint and checking them against the others? (5) What is the correlation between the frequency with which a word is given as a response to a particular cloze item and the frequency with which it is given as a response to a category name corresponding to one of the constraints?

PROCEDURE. Since subjects were needed whose reading ability could be depended upon, 20 graduate students in English or English education were used. Each was tested individually in a taped session and was asked to (1) list unrelated words, (2) list nouns, (3) answer cloze items, and (4) respond to a questionnaire. Answers to all cloze items necessarily named members of categories formed by Battig and Montague although they varied in the number of semantic constraints present (one,

two, or three), as determined by judges. Thus, five levels of constraint were effected: zero (unrelated word listing), syntactic (noun listing), and syntactic plus one, two, and three semantic constraints. Differences in response times between successive l-vels were analyzed for significance. Also, responses were ordered by frequency and correlated with those given by the Battig-Montague population. Mean correlations were determined at the three semantic leve's and their differences compared. Finally, several proportions were analyzed to determine confidence levels. They included the proportion of errors made on two- and three-semantic-constraint items which met at least one constraint and proportions of subjects responding in a predictable way to several scale items.

RESULTS AND CONCLUSIONS. (1) Significant differences in response time were observed between the syntactic-constraint level and each of the semantic levels and between the one- and two-semantic-constraint levels. Although a monotonic increase in response time was observed from the lowest to the highest level of constraint, only these differences were significant. The difference between the two- and three-semantic-constraint levels was thought, however, to have been artifactually depressed. The rationale for interpreting these latency measures was that a dependence of response time on number of constraints would imply that the examination set (word elements scanned unconsciously during retrieval) contained unacceptable (nontarget) words since the extra time was presumably used to evaluate the words. The data were largely supportive of this idea. (2) A high proportion (.926) of errors made on items with two and three semantic constraints met at least one of the constraints. This suggested that the examination set consists of word meeting one constraint--words located by means of stored associations. But this conclusion was limited by the possibility that some subjects simply had not recognized one or more constraints. (3) – (5) Further evidence, however, was provided by the fact that subjects tended to recall words meeting only one constraint and that they did not tend to seek such words deliberately. Moreover, the order of responses tended to be that associated with one of the constraints, regardless of their number.

These findings were combined in the following model of the cloze procedure, in which a flowchart format was adopted to indicate the stages of the process from stimulus to response.*



*Ti = Stimulus
C = Constraint
R = Word

HIERARCHICAL DISTANCE AND THE COMPREHENSION OF THE ANAPHORA

MORLES, Armando, Ph.D. The University of Chicago, 1977. Chairman: Dr. John R. Bormuth

The aim of this study was to test a theoretical model that attempts to explain the way the anaphora is comprehended. The model is based on the following assumptions supported by recent studies on the organization of semantic memory and semantic processing: (1) The concepts a person knows are hierarchically organized in a network that constitutes his semantic memory. The most general concepts are located at the top and the more specific ones at successively lower levels. (2) If two concepts belong to the same hierarchy, the time, and presumably the number of processing steps, taken to recall one when the other is presented as stimulus is directly proportional to the hierarchical distance separating the two concepts in the hierarchy. (3) A node is activated in semantic memory when the person encounters the term naming the concept that the node represents. This activation leaves a residual trace, which varies in strength and determines the concept's availability when the person employs it in cognitive processes. This activation strength decays with time and/or intervening activity. Consequently, this decay reduces the accessibility of a node for recall purposes.

In this study, anaphora is defined as a structure in which two concepts are hierarchically related in such a manner that one, the pronym, is superordinate to the other, the antecedent. The comprehension of the anaphora, on the other hand, is defined as a concept-matching process in which, when a pronym is met, the interpreter is prompted to find the antecedent and, then, to set the meaning of the pronym equal to the meaning of the antecedent.

The model assumes that the process of comprehending the anaphora takes time and that this time depends on the hierarchical distance separating the pronym from its antecedent. Therefore, the model asserts that the greater the anaphora's hierarchical distance, the more steps there will be in the process. The more steps there are in the process, the greater will be the possibility of errors and the harder the anaphora will be to comprehend.

Taken the previous reasoning into account, it was hypothesized that the farther the pronym is from the antecedent, the harder the anaphora will be to comprehend. In addition, it was hypothesized that the higher the pronym's frequency, the easier the anaphora and finally, that both the hierarchical distance and the pronym's frequency would not interact on the ease of comprehending the anaphora.

To test these hypotheses, two sets of paragraphs -- one for each of two versions of 30 paragraphs -- were administered to 68 fifth-grade children. The two versions differed in the hierarchical distance between the pronym and its antecedent, and the pronym frequency of the target anaphoras to be tested contained in each paragraph.

The subjects were requested to provide the antecedents of the target anaphoras by means by Wh-questions, and the responses given by them were compared by performing a MANOVA.

The results provided evidence indicating that hierarchically Near anaphoras are easier than Far, that High-frequency-pronym anaphoras are easier than Low-frequency and finally, that there is not significant interaction between Hierarchical Distance and Pronym Frequency.

This study has two main implications. It provides teachers and curriculum designers with some understanding of the skills needed to comprehend the anaphora, and also provides instructional material writers with guidelines for adjusting their materials to suit the comprehension skills of their intended readers.

THE EFFECTS OF MATURATION AND ACHIEVEMENT UPON PASSAGE INDEPENDENT TEST PERFORMANCE

Order No. 7805403

PAYNE, Willie R., Ph.D. Arizona State University, 1977. 81pp.

Two hundred ninety-four ninth- and eleventh-grade students were classified as above average, average, or below average readers according to results of a standardized reading test. The subjects were administered the test items from the alternate form of the test without the appropriate passages. The resulting scores were used to determine the effects of maturation (determined by grade level) and reading achievement on passage independent test performance. The results indicated: (1) the total group scored above the expected reading level based on mathematical probability, (2) students with higher reading achievement tended to score higher on passage independent tests than those with less achievement, (3) more mature students tended to score higher than less mature students, and (4) there appeared to be interaction between maturity and reading achievement among below average readers on passage independent test performance. These results might influence both authors and users to conduct similar studies prior to construction or adoption of reading comprehension tests.

A PSYCHOLINGUISTIC DESCRIPTION OF COMPREHENSION AS DEMONSTRATED BY GIFTED READERS IN GRADES FOUR AND FIVE

Order No. 7804938

POOLE, Diana Edith, Ph.D. Georgia State University - School of Education, 1977. 132pp.

The purpose of this study was to investigate the reading comprehension of a group of 30 fourth and fifth grade students who had been identified as gifted by their school system. These students also had scored a minimum of two years above grade level in either vocabulary or comprehension on the Iowa Test of Basic Skills.

The Reading Miscue Inventory and the Reading Experience Questionnaire, an informal questionnaire developed by the researcher, were administered to this population.

The Reading Miscue Inventory results for the group indicated the following: 1. Miscues tended to be semantically acceptable with a mean retelling score of 85% and a comprehension pattern score of 89%. 2. Miscues tended to be syntactically acceptable with a function score (conformed identically) of 91% and relationship (strong relationship) of 63%. 3. Grapho-phonological miscues did not tend to be as acceptable as semantic and syntactic miscues. The mean sound score (had L&S: sound similarity) was 43% and graphic score (high) was 49%. 4. The comprehension pattern for 70% of the group showed reading strategies which resulted in high comprehension scores. Of the total group, there were 10% whose reading strategies did not successfully result in high comprehension scores. 5. There were few miscues involving intonation. 6. There were few non-word substitutions in the readings. Word substitutions which were made in the readings generally related to the text. 7. Students at grades four and five seemed to use similar reading strategies in the attainment of meaning. 8. Miscuing (their correction and their nature) did not seem to predict comprehension for individuals. However, as a group there was a low correction percentage (22% of all possible miscues) and a low amount of miscues causing meaning change (7%).

The data from the Reading Experience Questionnaire indicated that: 1. There was early exposure to books and reading and some learned to read at an early age. 2. There seemed to be great intuition about the attainment of meaning in the reading process, and definite feelings and preferences in reading were indicated. 3. These students usually chose reading as a personal activity and as a group expressed a love for reading.

COVERT SPEECH IN THE BEGINNING READING PROCESS

RINGWALD, Leta Opal, Ed.D. University of Southern California, 1978. Chairman: Professor Charles M. Brown

Purpose. The purpose of the study was to investigate the role of covert speech in the short term memory process as it related to beginning reading instruction. Based upon the 1975 work of Denniston which posited the idea that covert speech is the mediator in the short term memory process, the study was undertaken in an effort to provide further implications for diagnostic and prescriptive procedures regarding emphasis for auditory coding in the short term memory during beginning reading instruction.

Methodology. Four classes of beginning first-grade pupils with varying language abilities, mental capacities, and ethnic backgrounds, from two schools in a selected district, were administered three assessment measures: Stanford Early School Achievement Test, Peabody Picture Vocabulary Test, and Conrad Memory Test. Upon completion of the testing, 96 pupils of the original 110 remained with sufficient data for the following statistical procedures: (1) Descriptive data of means, medians, and standard deviations were completed. (2) Correlations among the variables (mental age, covert speech, reading achievement, and sex) were obtained by Pearson product moment coefficient computations. (3) Stepwise multiple regression analyses were made between predictor variables (mental age, covert speech, and sex) and criterion measure (reading ability). (4) A partial correlation analysis was conducted between covert speech and reading ability with the other variables parceled out. A significance level of .05 was accepted.

Findings. (1) Correlation between Conrad difference score and reading score suggested that covert speech is a significant predictor of reading ability at the beginning stage. (2) Mental age was found to be a less significant, although still significant, predictor of reading ability at the beginning stage. (3) The combination of mental age and covert speech, were therefore found to be a significant predictor of reading at the beginning stage. (4) When Conrad difference scores was used as a predictor of beginning reading, none of the other variables of mental age or sex added any significance to the regression analyses. (5) Partial correlation analysis offered further evidence of the strong relationship between Conrad difference score and reading, with both sex and mental age parceled out.

Conclusions. (1) Covert speech should be recognized as an important part of the beginning reading process. (2) Identification of abilities and learning modalities of individual pupils will determine which pupils need additional training in auditory coding during the beginning reading process.

Recommendations for classroom practice. (1) Educators should be aware of and accept covert speech as one of the cues used by children in the reading process. (2) Methods and materials useful in training for covert speech should be devised, tested, and incorporated into reading programs. (3) Readiness programs should include attention to covert speech, especially for children below average ability. (4) Attention should be given in remedial reading programs to the possibility of covert speech being a helpful cue for children having difficulties in learning to read, especially when all others areas have been explored.

Recommendations for research. (1) Longitudinal studies of individual students above grade level, at grade level, and below grade level in reading achievement would provide insight and direction in our search for understanding of how covert speech is related to reading achievement at all levels of ability. (2) Studies of covert speech as related to (a) reading at other levels beyond the beginning stage, (b) remedial reading stage of all age groups, (c) various learning styles of individual students, and (d) other subject areas such as math and spelling, would be most helpful in diagnosing and prescribing programs for individual pupils, as well as giving insight into the learning process.

(Copies available from Micrographics Department, Doheny Library, USC, Los Angeles, CA 90007.)

REORGANIZATION AND THE RECALL OF PROSE

Order No. 7804386

SHIMMERLIK, Susan Marcia, Ph.D. Columbia University, 1975. 200pp.

Recently, an increasing number of investigators have attempted to apply the principles of organization theory of memory to simple prose materials. A review of the relevant literature suggested that phenomena found with discrete words are applicable to more complex materials. The purpose of the present research was to extend the investigation of the role of organization factors in memory to actual school learning materials and specifically to answer the following question: Does reorganizing written material while taking notes aid recall for that material? According to the encoding variability hypothesis it was predicted that reorganizing written material would aid recall in that it would give the learner the opportunity to encode the information in two different contexts. This would result in the storage of more and different retrieval cues, thereby increasing the probability that a given item of information would be recalled.

In Experiment 1, 82 high school juniors were given a prose passage describing four aspects, or topics, of four societies. The passage could be organized either by society or by topic. One-half of the subjects received the passage organized by society and one-half received the passage organized by topic. After reading the passage for 9 minutes, subjects were instructed either to 1) take notes on the information in the same order as the information was presented in the passage or to 2) reorganize the information in the passage according to certain categories while taking notes. Subjects were given 27 minutes to take notes, after which the passages were collected and subjects were given 5 minutes to study their notes. After a 4 minute interpolated task, subjects were instructed to free recall the information. Subjects who reorganized the material obtained a higher level of recall than subjects who did not.

Experiment 2, which followed the same general design of Experiment 1, included both a free recall and a recognition measure and a retest at a delayed retention interval of 7 days. Subjects were 264 high school juniors who ranged widely in verbal aptitude. It was demonstrated that the effect of reorganization persisted when the categories given to the subjects who reorganized the information were also given to subjects who did not reorganize. A significant interaction between verbal aptitude and free recall scores was due to the fact that subjects of average verbal aptitude benefitted from reorganizing to a greater extent than the brighter subjects. There was some evidence that the benefits of reorganization persisted over 7 days, although there was no interaction with verbal aptitude at the delayed retention interval. The prediction that reorganization would not have an effect on recognition, based on the dual-process theory, was not adequately tested, primarily because of the very high level of performance of all subjects on the recognition measure.

The findings of these experiments lend support to the encoding variability hypothesis and demonstrate the feasibility of applying principles of organization theory to real learning materials. Specific educational implications were discussed.

THE RELATIONSHIP OF IMAGERY AND PROPOSITIONS TO THE UNDERSTANDING OF SENTENCES

Order No. 7809016

SINDELL, Zoë Iris Shuman, Ph.D. Fordham University, 1978. 251pp. Mentor: Lillian C. R. Restaino

This study investigated the effect of varying level of imagery and number of semantic propositions upon readers at three ability levels. Fifty sentences were constructed varying two levels of imagery and five levels of propositional complexity, with test statements for evaluating sentence comprehension. Propositional complexity was defined in terms of the number of semantic propositions contained in a sentence, according to Kintsch's description (1974). The number of words and arguments were controlled at each of the five levels of semantic complexity. Level of imagery was defined as high (concrete) and low (abstract), using Paivio's (1971) definitions. At each of the five propositional levels, 10 sentences were constructed, five consisting of low-imagery words and five consisting of high-imagery words. Syntactical structure and word frequency were controlled for sentences at each propositional level.

Subjects were students in a junior high school, in a predominately white, low-to-middle class community in New York State. Based on the scores of the California Achievement Test, three levels of reading ability were established: unskilled, average, and skilled readers. By means of random selection, 100 students from each of the three reading groups were selected for the data analysis.

The data were analyzed by means of a three-way analysis of variance with repeated measures on two of the variables. The Bonferroni and Scheffé tests were used for cell mean comparisons.

There was a significant main effect for number of semantic propositions, with decreases in the number of correct responses as a function of the number of semantic propositions. The main effect of imagery was significant, with high imagery accounting for a greater number of correct responses than low imagery. As was expected, there were significant differences in number of correct responses as a function of reading level, with skilled readers responding correctly more frequently than average or unskilled readers.

There was a significant interaction between level of imagery and number of propositions; multiple comparisons indicated that more correct responses were given in the high-imagery condition than in the low-imagery condition across all propositional levels, except one, the level with the lowest number of propositions, where the reverse was indicated. There was a significant interaction computed between propositional level and reading level; multiple comparisons indicated that the number of correct responses tended to decrease as propositional complexity increased for the unskilled and average readers. Skilled readers showed significant increases in number of correct responses between propositional levels three and five, and levels four and five. The multiple comparisons for the significant interaction between reading and imagery levels indicated that there were more correct responses at the high-imagery level than at the low-imagery level for the three groups.

The three-way interaction of imagery, proposition, and reading levels reached significance; multiple comparisons indicated that all groups tended to obtain more correct responses when test items were either low in propositional complexity or high in imagery or both. Because unskilled readers tended to score similarly across all proposition and imagery levels, their responses were less affected by the combination of imagery and proposition levels.

The results of this study indicate that readers at all ability levels find text that is concrete in imagery or few in number of semantic propositions easier to comprehend. Concrete imagery facilitates comprehension of multipropositional sentences, but the reader must be able to deal with such sentences before the imagery level can be of any help to him.

AN ANALYSIS OF CHILDREN'S READING BEHAVIOR AS CONTROLLED BY LEVEL OF DIFFICULTY OF READING MATERIAL AND REINFORCEMENT HISTORY

Order No. 7808716

STEWART, Bernice, Ed.D. West Virginia University, 1977. 120pp.

Reading specialists tend to say that readers like to read on the basal level, find the instructional level challenging, and hate to read on the frustration level. When readers read difficult material they show behavior that is called "symptoms of reading difficulty". The symptoms of reading difficulty are said to increase in direct proportion to the increase in the level of difficulty of the material. When behavior analysts look at behavior they look not only at the preceding stimulus for the behavior, for example, the difficulty level of the material, but also at the consequences that follow the person's behavior. Rather than saying that symptoms of reading difficulty increase in direct proportion to the difficulty of the material a behavior analyst says that such behavior is acquired and maintained by its consequences.

The purpose of the study was to investigate the role in children's reading behavior of level of difficulty of reading material and reinforcement history. An ABAB intra subject replication design was used to functionally analyze the reading behavior of three subjects as they chose and read material on three levels of reading difficulty, namely the basal, instructional and frustration levels. After baseline measures were recorded, the children were not given any points for reading material on their basal level. They were given one point for reading instructional level material and two points for reading frustration level material. The baseline conditions and the treatment conditions were then repeated.

An informal reading inventory was formulated to place the children in material at their three levels of reading difficulty. Material from the Verbo' Skills Curriculum System was used. The independent variable was the number of points given and the dependent variable was the children's choice of a level of difficulty of reading material.

The experimental treatment had a clear effect for all three subjects. The means of the reading level choices showed that the children read more difficult material when they were given two points for reading it than when they were given one point. Only one of the three showed any of the behaviors usually associated with reading difficult material. They were not the more extreme ones. She merely asked how to pronounce some of the foreign words and what some of the more difficult words meant.

When children are reinforced and not punished for reading difficult material they will read it without showing signs of frustration. For instructional purposes the number of errors a reader makes is not as important in determining probability of response as are the consequences that follow the reader's errors. The author is not suggesting that children be initially taught to read by using difficult material. There should be a place in the curriculum, however, for children to do so. They need to be reinforced for trying. They will then build reinforcement histories that will let them reread the material until they obtain meaning from the print. As it has been shown that rereading improves comprehension, it is important that readers do not give up when they first experience difficulty.

DEVELOPMENT OF FLEXIBILITY OF SCHEMA SHIFTING IN PROSE COMPREHENSION Order No. 7804179

TOWNSEND, Michael Alan Richard, Ph.D. University of Illinois at Urbana-Champaign, 1977. 85pp.

This study was an investigation of whether there is a developmental increase in the flexibility with which children are able to switch from schema to schema in the comprehension of prose passages concerning different topics.

Recent research supports the position that the meaning of a prose passage is dependent on an interaction between the immediate linguistic input and the activated knowledge structures (schemata) of the reader or listener. Different passages must be interpreted in the light of different schemata. As passage topics change, so must the schemata if comprehension is to be maintained. This change in schemata can be referred to as schema shifting.

Children from grades 3, 4, 6 and 11 listened to two ambiguous passages about familiar topics. Half of the children were explicitly cued to the topic change by giving the appropriate title just prior to hearing each passage. The remaining children were given both titles before hearing the first passage and the passages were presented with no pause between them. Thus, for these children the point of topic change was not explicitly cued. Free recall by all children was given after hearing both passages. Failure to note the topic change and to make the appropriate schema shift should be evident in lower recall of the second passage by children in the uncued shift condition than by children in the cued shift condition. If schema shifting becomes more flexible with age the difference in second passage recall between the two shift conditions should decrease as grade level increases.

Analyses of total amount of recall across both passages, and recall of each passage half within a passage, failed to find the expected interactions between shift condition, passage position, and grade. Children in the uncued shift condition were able to perceive the topic change and make the appropriate cognitive adjustments as easily as children in the cued shift condition. Furthermore, this was true for all grade levels.

However, interview data collected from children in the uncued shift condition indicated that the topic change was perceived more easily by older children than by younger children. Furthermore, there was a significant interaction between the ease with which the topic change was noticed and recall of each passage. Less information was remembered from the second passage by children who reported difficulty in noticing the topic change.

It was suggested that the use of passages about highly familiar daily activities may have been responsible for the failure to find the expected shift condition and grade level interaction effects. There was a significant main effect for shift condition in the analyses of overall recall and first passage recall. Children in the uncued shift condition remembered less information than children in the cued shift condition. Some possible explanations of this result were discussed. Some further comments concerning alternative testing procedures were also provided.

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